Communicable Disease Report

Hawai'i Department of Health
Communicable Disease Division

November/December 1999

Enhancing Hawai`i's Influenza Surveillance

The Department of Health (DOH) is once again asking healthcare providers to assist in efforts to augment statewide influenza surveillance. Hawai`i's unique geographic location and visitor profile make it likely that practitioners here will be among the first to encounter new influenza strains arriving from the southern hemisphere. Statistics from the United States (U.S.) Centers for Disease Control and Prevention (CDC) indicate that Honolulu receives an average of 8,000 arrivals from Asia every day; no city in the U.S. receives more. This is why Honolulu was one of only four U.S. cities targeted for focused surveillance for avian influenza A (H5N1) in 1997 and why Hawai`i remains an appropriate focus for national pandemic preparedness.

The next influenza pandemic unfolds.

A cluster of unusually severe respiratory illness occurs in a small Asian village. Within the next few weeks, outbreaks appear in Hong Kong, Singapore, Korea and Japan and the causative agent is identified as a new variant of influenza virus. A week later the virus is isolated from ill visitors arriving in Honolulu.

Will we be prepared?

While the above scenario may sound "sensational," it is realistic. An outbreak of influenza A was confirmed among cruise ship passengers that arrived in Hawai`i from Acapulco in May 1999. Although the cruise ship did not carry a "pandemic" influenza strain, it did transport an influenza disease outbreak into the State. This outbreak was not reported until four days after the ship had arrived, and three days after two ill passengers had been discharged on Kaua`i for medical care. Notification of this outbreak was not received by the DOH until after the 2500 passengers and crew disembarked in Honolulu with no available local contacting information. There were 100 reported cases of illness among the passengers and crew. Hawai`i Administrative Rules label suspected outbreaks as an "urgent category notifiable disease", with State Law mandating reporting by telephone **as soon as a provisional diagnosis is made**.

The apparent lack of "respect" for influenza is a primary concern of the public health community. Influenza's ability to cause sudden, pervasive infection in all age groups on a global scale has been demonstrated during the three pandemics of this century. Conservative estimates of the 1918 "Spanish flu" indicate that one-fifth of the world's population suffered influenza and serologic evidence indicates that the majority of those that did not become ill had subclinical infections. More than 20 million deaths occurred worldwide, primarily in young adults. While mortality rates associated with the 1957 "Asian flu" and 1968 "Hong Kong flu" were reduced in part by antibiotic therapy for secondary infections and aggressive supportive care, both of these pandemics were associated with high rates of morbidity and social disruption.

The purpose of pandemic preparedness is to improve prevention and control of influenza at this time, and to identify and implement specific mechanisms to improve our readiness. Given historical precedent, it is reasonable to expect that additional pandemics will occur and that Hawai`i could be the first State to encounter new influenza strains. While this is not cause for panic, it is indicative of a crucial focal point for efforts at

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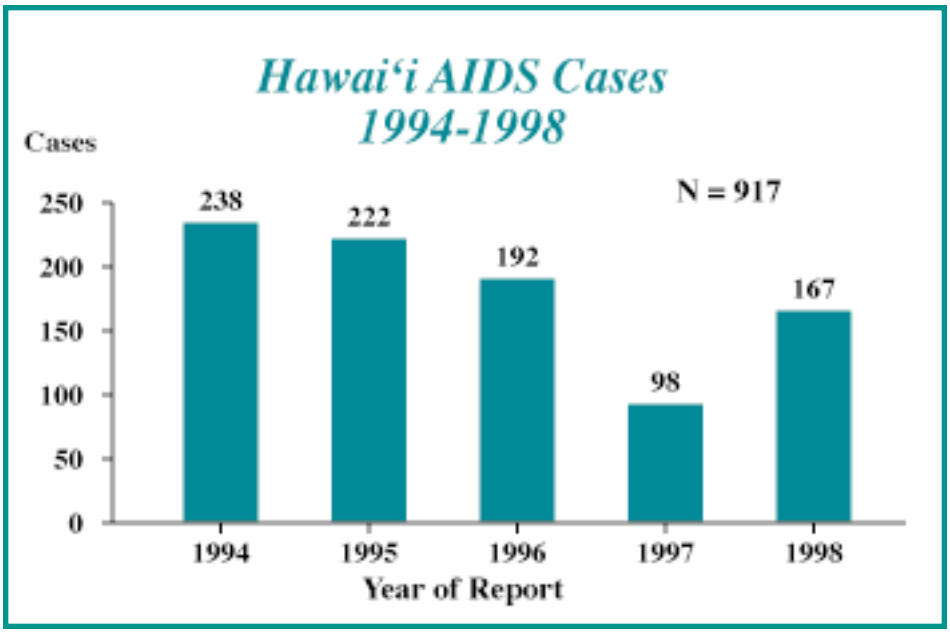
Epidemiology of AIDS in Hawai‘i: 1994-1998

Five Year Case Review

From 1994 through 1998, 917 cases of Acquired Immune Deficiency Syndrome (AIDS) were reported to the State of Hawaii Department of Health (DOH). Of these, 255 died, for a case fatality rate of 28%. The number of reported cases decreased annually from 1994 to 1997, but the number of cases in 1998 increased to 167 compared to 98 cases in 1997 (see Figure). The 1998 increase is most likely due to the change in reporting requirements for AIDS rather than an increase in the epidemic. Beginning in January 1998, laboratories in Hawai‘i are required to report low CD4 values (<200 cells/ml or <14% of total lymphocytes). Patients with low CD4 values are potential AIDS cases. The AIDS surveillance staff is now able to identify AIDS cases earlier than in previous years.



Gender: Ninety-two percent (840/917) of the 1994-1998 reported cases were male and 8% (77/917 cases) were female. The proportion of male cases decreased from 94% (223/238 cases) in 1994 to 90% (150/167 cases) in 1998. At the same time the proportion of female cases increased from 6% (15/238 cases) in 1994 to 10% (17/167 cases) in 1998.

Age: Most AIDS cases were diagnosed in the 30 - 39 year-old age group (45%, 361/917 cases), followed by the 40-49 year-old age group (29%, 262/917 cases). The proportion of cases for 20-29 year-old age group decreased from 11% in 1994 to 8% in 1998. At the same time the proportion of cases for 40-49 year-old age group increased from 26% in 1994 to 29% in 1998. The proportion of cases for the 30-39 year-old age group remained the same during the five year period. Less than 1% (5/917 cases) were from the 0-12 and 13-19 year-old age groups during this period.

Risk Factors: Most AIDS cases (72%, 662/917 cases) were associated with men having sex with men (MSM). Injection drug use (IDU) alone accounted for 8% of cases (77/917). The combination of MSM/IDU accounted for 7% (60/917) of cases. The proportion of cases of MSM decreased from 78% in 1994 to 69% in 1998. On the other hand, the proportion of cases with IDU increased from 5% in 1994 to 11% in 1998. The proportion of female heterosexual cases increased slightly, from 3% in 1994 to 5% in 1998.

County: Cases were reported from the islands of O‘ahu, Hawai‘i, Maui, Kaua‘i, and Moloka‘i. Most AIDS cases were diagnosed in O‘ahu (71%, 649/917 cases) followed by Maui county (13%, 120/917 cases). Based on the population of each county, Maui county had the highest 5-year AIDS rate (102.5 per 100,000 population) and followed by Hawai‘i county (82.4 per 100,000).

Race/Ethnicity: The table shows the distributions of Hawai‘i’s AIDS cases by race/ethnicity. Caucasians accounted for 58.2% (534/917) of AIDS cases, and were over-represented relative to their proportion (33.4%) of the state’s population. The second most over-represented group among AIDS cases were African-Americans, with 4.8% (44/917 cases) of AIDS cases, but comprising only 2.5% of the state’s population. The Asian-Pacific Islander group (API), a combination of Hawaiian, Filipino, Japanese, Chinese and many other ethnic groups were underrepresented, accounting for 30.3% (278/917) of the cases, while the API group accounts for 61.8% of the state’s population.

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The Health State
HAWAI‘I STATE DEPARTMENT OF HEALTH

Editor:
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Published bimonthly by the Hawai‘i Department of Health, Communicable Disease Division, 1250 Punchbowl Street, Honolulu, Hawai‘i 96813
Postage paid at Honolulu, Hawai‘i

At Risk for Pneumococcal Disease? Medicare Part B Reimburses Physicians

What disease kills more people in the United States (U.S.) than all other vaccine preventable diseases?
Pneumococcal disease, caused by *Streptococcus pneumoniae*, results in widespread illness and death throughout the U.S. each year. More than 40,000 people die from pneumococcal infections in the U.S. each year.

Efforts to develop effective pneumococcal vaccines began as early as 1911. However, with the advent of penicillin in the 1940s, interest in the vaccine declined, until it was observed that many patients still died despite antibiotic treatment. The first pneumococcal vaccine was licensed in the U.S. in 1977.

What are the major clinical syndromes of invasive pneumococcal disease?
Bacterial pneumonia, bacteremia, and meningitis are the major clinical syndromes of invasive disease. The immunologic mechanism that allows disease to occur in a carrier is not clearly understood. Invasive pneumococcal disease most often occurs when a predisposing condition exists, particularly pulmonary disease.

There are an estimated 150,000 to 570,000 cases of pneumococcal pneumonia annually, an estimated 16,000 to 55,000 cases of pneumococcal bacteremia, and an estimated 3,000 to 6,000 cases of bacterial meningitis.[1]

What is the most common clinical presentation of invasive pneumococcal disease?
Pneumonia is the most common clinical presentation of invasive pneumococcal disease. The incubation period of the pneumonia is short, about one to three days. Symptoms generally include an abrupt onset of fever and shaking chills or rigors. Other common symptoms include pleuritic chest pain, productive cough with mucopurulent rusty sputum, dyspnea, tachypnea, hypoxia, tachycardia, malaise, and weakness. Nausea, vomiting, and headaches occur less frequently.

What is the drug of choice for treating pneumococcal disease?
Penicillin is the drug of choice for treatment of this disease. Patients who are allergic to penicillin may be given cephalosporins (depending on the type and severity of the penicillin allergy) or erythromycin for pneumonia. For severe penicillin allergy the treatment of pneumococcal meningitis is vancomycin plus rifampin. Treatment of life-threatening pneumococcal disease such as sepsis or meningitis must consist of a third generation cephalosporin (cefotaxime or ceftriaxone) plus vancomycin to cover for the possibility of drug resistant *Streptococcus pneumoniae* pending culture and sensitivity results of appropriate body fluids.

Is there drug resistance in using any of these antibiotics for the treatment of pneumococcal disease?
Yes. Resistance to penicillin and other antibiotics is rising, and studies indicate that 5 to 15% of pneumococci are resistant.

How is *Streptococcus pneumoniae* transmitted?
Transmission occurs as the result of direct person-to-person contact via droplets, and by autoinoculation in persons carrying the bacteria in their upper respiratory tract. The reservoir for pneumococci is presumably the nasopharynx of asymptomatic human carriers. There is no animal or insect vector. Transmission occurs worldwide and is more common during the winter and early spring when respiratory diseases are more prevalent.

Is there an effective vaccine to protect against pneumococcal disease?
A 23-valent polysaccharide vaccine provides protection from 23 types of *Streptococcus pneumoniae* that cause 88% of bacteremic pneumococcal diseases. In addition, cross-reactivity occurs for several capsular types which account for an additional 8% of bacteremic disease.

Pneumococcal vaccine efficacy studies have shown various estimates of clinical effectiveness. Overall the vaccine is considered to be 60 to 70% effective in preventing invasive disease. The vaccine appears to be less effective in preventing non-bacteremic pneumococcal pneumonia. The vaccine may be less effective in preventing pneumococcal infection in some groups, particularly those with significant underlying illness. Although the vaccine may not be as effective in immunocompromised persons, it is still recommended for such persons because they are at high risk of developing severe disease.

The vaccine is moderately efficacious in preventing invasive pneumococcal disease, but less effective against pneumococcal pneumonia. The current vaccine is not effective in children less than two years of age, the age group with the highest incidence of invasive pneumococcal disease. *Streptococcus pneumoniae* is now the leading cause of bacterial meningitis in infants and young children.

Is there work currently in progress to develop a vaccine that could prevent invasive pneumococcal disease in infants and young children?
Yes. The current 23-valent pneumococcal vaccine is not licensed and is not effective for use in children ≤two years of age. A seven-valent conjugate pneumococcal vaccine is being developed and appears to be highly effective in prevents pneumococcal meningitis in infants as young as six months of age.

Who are the persons most *at-risk* for pneumococcal pneumonia disease or severe disease complications?

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Epidemiology of AIDS

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National and Global Overview

An estimated 820,000 persons[1] in the U.S. are believed to be infected with HIV, including 19,393 new HIVinfections and 48,269 new AIDS infections in 1998. There have been 400,000 fatalities from AIDS.[2]

As of December 1998, the Joint United Nations Programme on HIV/AIDS[3] estimated there are 33 million persons worldwide infected with HIV, including 14 million adult women, and 1 million children. An estimated 5.8 million new infections occurred in 1998, of which 95% were in developing nations. There were 2.5 million AIDS deaths in 1998, adding to the cumulative total of 14 million since the beginning of the epidemic.

Case Reporting

Physicians report AIDS cases confidentially to the AIDS Surveillance Program. AIDS case reporting is required by Hawai'i Revised Statutes (HRS) §325-2, and the new Administrative Rules §11-156-3 for low CD4 values (<200 cells/ml or <14% of total lymphocytes). Reports are handled by AIDS Surveillance Program personnel in the strictest confidence. Names or other identities are not released.

Epidemiological Profile

An *Epidemiological Profile of HIV/AIDS in Hawai`i* was prepared by the AIDS surveillance staff and includes AIDS data from 1983 to December 1998. The profile describes the impact of HIV/AIDS in Hawai'i populations. It provides an overview and detailed analysis of who is at risk for HIV/AIDS by risk group, race/ethnicity, gender, and age.

AIDS Surveillance Quarterly Report

A quarterly epidemiology review of AIDS in Hawai'i is provided in the *AIDS Surveillance Quarterly Report* (ASQR) which is distributed to approximately 800 subscribers.

To obtain AIDS Report Forms, a copy of the *Epidemiological Profile of HIV/AIDS in Hawai`i, 1998,* or be placed on a mailing list to receive a copy of the *AIDS Surveillance Quarterly Report*, please contact the AIDS surveillance staff by telephone in Honolulu at (808) 733-9010, or by fax at (808) 733-9015. The AIDS Surveillance Quarterly Report is also available on the internet at *http://www.hawaii.gov/doh/resource/comm_dis/std_aids/aids_rep/.*

Hawai'i's AIDS Cases by Race/Ethnicity

Race/Ethnicity	1994-1998		*State Poplulation
	No.	(%)	(%)
Caucasian	534	58.2	33.4
Hispanic	56	6.1	7.3
Af. American	44	4.8	2.5
Asian/PI ((API)	278	30.3	61.8
Hawaiian	102	11.1	12.5
Filipino	53	5.8	15.2
Chinese	21	2.3	6.2
Japanese	49	5.3	22.3
Other API	53	5.8	5.6
Other	5	0.5	2.4
Total Number	**917**	**100.0**	**1108229**

*Sources: 1990 U.S. Census

References:

[1] Centers for Disease Control and Prevention, HIV/AIDS Surveillance Report. 1998;10(2):14-15. Available on the internet at *http://www.cdc.gov/nchstp/hiv_aids.*

[2] Centers for Disease Control and Prevention, HIV/AIDS Surveillance Report. 1998;10(1):35. Available on the internet at *http://www.cdc.gov/nchstp/hiv_aids.*

[3] AIDS epidemic update: December 1998. Joint United Nations Programme on HIV/AIDS. Available on the internet at *http://www.unaids.org/publications/documents/epidemiology/surveillance/wad1998/wadrp98e.*

Submitted by Pritty B. Borthakur, M.Sc., B.Phil., M.S., Epidemiological Specialist, Hawai`i AIDS Surveillance Program, STD/AIDS Prevention Branch.

Pneumococcal Disease

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- Those 65 years of age or older and children under two years of age;
- Those who have underlying medical conditions including chronic cardiovascular diseases such as congestive heart failure or cardiomyopathy, chronic pulmonary diseases, or chronic liver diseases;
- Those with immunosuppressive conditions, including, but not limited to, HIV, leukemia, and lymphoma;
- Persons with diabetes, heart, lung, or kidney diseases;
- Those with functional or anatomic asplenia such as sickle cell disease or splenectomy; and
- Residents of nursing homes and other long term care facilities.

What if a patient had a pneumococcal shot before he/she turned 65 years of age, and it has been five years or more since the vaccination?

The patient should be revaccinated for pneumococcal pneumonia (See Figure on page 13).

What if a patient cannot locate his/her immunization record card?

The Advisory Committee on Immunization Practices (ACIP) recommends that if

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Influenza Surveillance

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this time. Preparedness now will not only facilitate an effective response when the time comes, but also provide tangible benefits in the interim.

For more information about influenza surveillance, prevention and control, please call the Epidemiology Branch on O`ahu at (808) 586-4586. Updates on influenza activity in Hawai`i as well as a hyperlink to the CDC influenza information can be accessed at the DOH Influenza web site at: *http://www.hawaii.gov/doh/resource/comm_dis/flu/index.html.*

REFERENCES:

Centers for Disease Control and Prevention. Prevention and Control of Influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 1999;48(RR-4):1-28.

Centers for Disease Control and Prevention. Draft Influenza Pandemic Planning Guide for State and Local Officials. January 1999; Version 2.1.

Submitted by Michele Nakata, Epidemiological Specialist, Investigations Section, Epidemiology Branch.

What you can do to enhance Hawaii's influenza surveillance efforts:

Encourage and increase routine annual influenza vaccination coverage in your patients, especially those in target groups.

This will not only reduce their risk for morbidity and mortality during annual epidemics, but will facilitate access to patients, through greater confidence in the benefits of influenza vaccination, should a pandemic occur.

Each year, outbreaks continue to occur in skilled nursing and long-term care facilities. In investigating these outbreaks, poor immunization levels have been found repeatedly in facility staff, although influenza vaccination is strongly recommended for both residents and staff. While facility residents usually have very high vaccine coverage levels, immunity generated in this group is not ideal. In contrast, facility staff, due to health status, are more likely to develop protective immunity by vaccination. Also, staff members generally have a greater amount of contact with individuals outside of the facility, thus are more likely to initially be infected with influenza. In fact, staff illness has preceded resident illness in many outbreaks investigated.

In addition to being or working with high-risk individuals, how many of your patients visit, care for, or reside with individuals at high-risk for complications due to influenza? Many would brave an annual vaccination to protect a loved one from serious illness.

Report suspected outbreaks, increased influenza-like illness activity or unusually severe respiratory illness to the Epidemiology Branch.

Consider the possibility of influenza throughout the year. The DOH identified three outbreaks of influenza A in two skilled nursing facilities and a hospital on O`ahu during the summer of 1999. A total of 88 cases of influenza-like illness were documented, with 22 confirmed as influenza type A. Three deaths occurred during two of the outbreaks, one related to pneumonia and one in a confirmed case of influenza.

Collect specimens for influenza viral cultures.

Virologic surveillance is essential for monitoring the antigenic characteristics of circulating influenza strains providing valuable information such as strain coverage under the current influenza vaccine and the emergence of antigenic variants or novel strains. Although no-cost cultures were offered to Hawai`i physicians during the 1998-99 surveillance season, no increase in specimen submissions were noted in comparison with previous years. While the relatively low level of influenza-related morbidity during the past season may have reduced interest in viral cultures, it is also likely that perceived lack of utility adversely affected specimen submissions.

Recognizing the clinicians' need for timely, utile information, the DOH has recently established rapid antigen testing with Clinical Laboratories of Hawai`i, Diagnostic Laboratory Services and the Straub Tilden Laboratory. Healthcare providers who use these clinical laboratory services will have access to rapid antigen testing when appropriate specimens are submitted for influenza virus culture; supplies for specimen collection are available through these laboratories. Rapid tests will be performed and reported back to clinicians by the private laboratories. Culture specimens will be forwarded to the State Laboratories Division for viral culture and the Epidemiology Branch will report results back to clinicians.

Communicable Disease Outbreaks in Hawai`i: 1998

The Department of Health (DOH) Epidemiology Branch investigated 538 reports of infectious disease and toxic illness in 1998. These investigations identified 85 communicable disease outbreaks involving 1,198 case patients. Single case reports of notifiable infectious diseases are documented and reviewed on a case-by-case basis, but are not included in the summary table of communicable disease outbreaks unless a single case report leads to the identification of an outbreak.

There were 329 food-related complaints that resulted in the identification of 74 outbreaks of food borne disease. These included 34 incidents of ciguatera poisoning, 24 incidents of scombroid fish poisoning, and 4 incidents of hallucinogenic fish poisoning.

The most notable food borne illness event for 1998 was a *Staphylococcus aureus enteritis* outbreak at a Christmas

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Table 1. Summary Table of Communicable Disease Outbreaks – Hawai`i, 1998

DISEASE Status of Investigation	MODE OF TRANSMISSION /Outbreaks by County	SETTING	NO. OF CASES[1]
Gastroenteritis- suspected viral etiology	Person-to-person (1)	Retirement residence –1 (Oahu)	42
Gastroenteritis-suspected (Undetermined etiologic agent)	Possible Foodborne (7 outbreaks) Hawai`i- 2  Kaua`i –1 O`ahu – 4	 Elem./ inter. School lunches – 1 (Hawai`i) DOE Training workshop:-1 (Hilo) Leftovers from 2 catered meals/workplace party-1 (Kaua`I) Health Assoc. Banquet Restaurant –1 (O`ahu) Junior Prom buffet – 1 (O`ahu) Restaurant fried rice /2 separate parties (O`ahu) 1 restaurant / 2 parties –1 (O`ahu)	 171 + 19 19 39 58 2 (party A); 2 (party B) 14 (party A); 10 (party B)
Influenza A – Confirmed	Person–to–person Maui –2 O`ahu –5	 Hospital –1(Maui) Nursing home- 1(Maui) Elementary school –1 (O`ahu) N. Shore high/interm. Schools –1 (O`ahu) Hawaii State Hospital –1 (O`ahu) Nursing home-1 (O`ahu) Nursing home-1 (O`ahu)	 73 (staff/residents) 9 (residents) 72 + 38 30 (staff/residents) 40 (staff/residents) 17 (staff/residents)
Probable influenza: other respiratory agent	Person-to-person O`ahu –2	Elementary School –1 Nursing home –1	7 119
Confirmed Rotavirus Gastroenteritis	Person-to-person O`ahu –1	Nursing home – 1	7
Hallucinogenic Fish Poisoning	Foodborne (4 outbreaks) Maui- 2 Hawai`i-0 Kaua`i-1 O`ahu-1	Recreationally caught fish-3 Market-1 (Goatfish-3, mullet-1)	6
Scombroid Fish Poisoning	Foodborne (24 Outbreaks) Hawai`i-3 Kaua`i-8 Maui-2 O`ahu-11	Cafeteria meal – 2 Restaurant –15 Home prepared-5 Lunch wagon –1 Market –1	36
Ciguatera Fish Poisoning	Foodborne (34 Outbreaks) Hawai`i-7 Kaua`i-2 Maui-7 O`ahu-18	Recreationally caught fish –27 Restaurant –1 Store purchased-4 Street vendor –2	69
Probable *Staphylococcus aureus* enteritis	Foodborne O`ahu-1	Hotel meal / eggs benedict – 1	3
Confirmed *Staphylococcus aureus* enteritis	Foodborne Kaua`i-1 O`ahu-1	 Catered kalua pig for picnic –1 Catered bentos for Christmas party – 1	15 207 +
Clostridium perfringens enteritis	Foodborne O`ahu –1	Catered wedding reception –1	36
Salmonella enteritidis Phage type 4	Foodborne Central O`ahu-1	Consumption of farm A eggs – 1 (Community-wide outbreak)	38
TOTAL		**Outbreaks: 85**	**Cases: 1198**

[1] Cases are determined based on laboratory confirmation, epidemiologic association, and/or outbreak case definition inclusion.

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party traced to tainted bento meals. Another significant gastrointestinal disease outbreak was the occurrence of a Rotavirus infection at a private skilled nursing facility on the island of O`ahu. Nine outbreaks of upper respiratory illness were also identified on the islands of O`ahu, Hawai`i, Maui, and Kaua`i.

The 85 communicable disease outbreaks in Hawai`i during 1998 are summarized in Table 1. This article also describes details of three outbreak investigations, and reminds health care providers of their role in reporting suspected infectious disease outbreaks to the DOH.

Clostridium Perfringens Food Poisoning

(October 3, 1998)

On October 6, 1998, a physician reported a gastrointestinal illness in a patient who attended a wedding reception on the evening of October 3, 1998. The Epidemiology Branch initiated an investigation to determine if a food borne outbreak had occurred.

About 150 people attended the reception, and enjoyed a buffet dinner professionally catered by four separate companies. One company provided only the ahi poke and ahi sashimi appetizers. A second company provided the 10 food items served in the buffet. The third company provided the wedding cake. A fourth company supervised the serving of all of the food items plus the beverages, which included red and white wines, assorted beers, and soft drinks.

A food history questionnaire was administered by telephone to attendees from a guest list provided by the host. In addition, the DOH interviewed all catering staff members to obtain food and illness histories. The State Environmental Microbiology Laboratories Branch analyzed the collected food items for bacterial pathogens.

Table 2. Single Table Analysis of Food Items

Buffet Item	Odds Ratio (OR)	95% Confidence Interval	P-value
Kalua pig	9.89	2.08 < OR < 64.68	0.0002
Chicken lau-lau	3.07	1.24 < OR < 7.71	0.006
Inari (cone) sushi	2.93	1.21 < OR < 7.18	0.008

Questionnaires were administered to 123 (82%) of the 150 attendees. There were 65 (53%) females, and 58 (47%) males interviewed. The median age was 29 years, with a range of 1 to 89 years. A case for this investigation was defined as a person who drank or ate at the wedding reception on October 3, 1998, and subsequently experienced ≥3 loose stools in any 24 hour period over the next four days. There were 36 (29.3%) people who met the case definition.

In addition to loose stools, symptoms of abdominal cramps, bloating, nausea, and headache were also reported. Fever occurred in only 3 of 36 people. The mean incubation time was 16.7 hours, with a range of 3 to 94.5 hours. Symptoms began between 10 and 19 hours after the reception in 16 (47%) people. The mean duration of illness was 36 hours with a range of 4 to 96 hours.

On the recommendation of the catering staff, all leftover food items from the buffet were discarded immediately following the reception. However, four of the buffet items (kalua pig, chicken lau-lau, lomi salmon, and chicken long rice) were recovered from a service staff member who collected the items in separate containers prior to being served.

Single Table Analysis showed that the kalua pig, chicken lau-lau, and the inari (cone) sushi were significantly associated with illness (Table 2). No other food items or beverages consumed were demonstrated to be significantly associated with illness. Single Table Analysis was **not** able to discern whether any given food item could have been implicated by virtue of its association with the consumption of a second food item. Logistic regression analysis of the three food items implicated by Single Table Analysis demonstrated that the kalua pig and the inari (cone) sushi were **independent** predictors of illness. The chicken lau-lau failed to meet the test of significance in the regression analysis (Table 3).

Four food items including the kalua pig, chicken lau-lau, lomi salmon, and chicken long rice were collected from the catering service and tested at the State Laboratories Division (Table 4). *Clostridium perfringens* was isolated from the Kalua pig and the Chicken lau-lau. Due to the delay in reporting of the incident to the DOH, no clinical specimens were available for laboratory analysis.

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Table 3. Logistic Regression Analysis Summary

Buffet Item	Odds Ratio (OR)	95% Confidence Interval	P-value
Kalua pig	7.4	1.59 < OR < 34.38	0.011
Inari (cone) sushi	3.0	1.16 < OR < 7.24	0.014

Table 4. Laboratory Results of Food Items

Buffet Item	Organism Isolated	Bacterial Counts
Kalua pig	*C. perfringens*	* 2.5×10^7
Chicken lau-lau	*C. perfringens*	* 9.3×10^5
Chicken long rice	------	* $< 10^5$
Lomi salmon	------	* $< 10^5$

- Reference: Positive= 1×10^5 per gram of specimen
- Negative $< 10^5$ per gram of specimen

Outbreaks in Hawai'i

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The Sanitarian's report found that the temperature of the two walk-in food refrigerators at the site was higher than the recommended ≤ 45°F. The catered food items were allegedly delivered some 4 hours prior to the scheduled serving time. Hot holding units may not have been used.

Discussion

The high attack rate (26%) for individuals who ate the implicated meal, and the relative uniformity of the incubation period suggested a common source exposure. Statistical analysis of the food and beverage items served at the reception buffet implicated both the kalua pig and inari (cone) sushi as independent predictors of illness. Laboratory analysis demonstrated that at least two food items were significantly contaminated with *Clostridium perfringens*. This microorganism produces a clinical syndrome similar to the clinical features of this outbreak. The early delivery of the buffet items four hours before the scheduled serving time without the on-site provision of adequate food hot-holding capability at the reception may have contributed to the outbreak.

Rotavirus Gastroenteritis in an O`ahu Nursing Home

November 26 – December 6, 1998

On November 27, 1998, the Epidemiology Branch was notified of diarrheal illness and fever among nursing home residents at a skilled nursing facility on O`ahu. No employees were ill with the same symptoms.

The skilled nursing facility housed 25 persons in a 32-bed facility. A total of seven out of 25 residents (28%) experienced at least one episode of loose stool or watery diarrhea with or without documentation of low-grade fever. One case-patient reported emesis. Stool specimens were obtained from all seven cases. An incubation period of 48 hours was estimated. The introduction of the etiologic agent by a staff member or visitor(s) into the facility could not be excluded. The duration of symptoms was 24 – 48 hours. One patient was hospitalized for treatment of dehydration. All who experienced the illness recovered. Food was not suspected as a vehicle for transmission of infection. The kitchen also provided food service for assisted-living residents living on floors above the skilled nursing facility, and these residents did not experience similar symptoms during the time of the outbreak. Strict hand washing and the use of gloves during patient care were implemented to control the outbreak.

The seven stool specimens were tested at the DOH Laboratories Division for enteric pathogens and ova and parasites. All specimens tested negative for *Campylobacter, Salmonella, Shigella, Yersinia, Vibrio spp., Escherichia coli O157:H7* and ova and parasites. The specimens were forwarded to the Centers for Disease Control and Prevention (CDC) for viral analysis. Four of the seven stool specimens tested positive for group A rotavirus by electron microscopy and enzyme immunoassay[1].

This outbreak of group A rotavirus is the first to be detected in a nursing facility in Hawai`i. The detection of viral illness in this susceptible population is not new. Group A rotavirus is most commonly associated with diarrhea in children. The short duration and mild illness experienced by the patients in this nursing facility are consistent with previous reports of rotavirus infections in adults.[2] The mode of transmission for this outbreak was most likely person-to-person (fecal-oral or respiratory droplet)[3] with the etiologic agent being introduced into the facility at or around the last week of November 1998. The DOH was unable to identify the source of this outbreak. No new cases of rotavirus gastroenteritis occurred after December 6, 1998.

Staphylococcal Food Poisoning From Tainted Bento Meals

December 19, 1998

On December 19, 1998, a hospital representative notified the Epidemiology Branch of several patients treated in various emergency rooms (ERs) on O`ahu for gastrointestinal symptoms including vomiting and diarrhea. The patients reported consumption of a common meal at a department Christmas party about one to four hours prior to illness onset.

ER personnel were notified to collect stool and vomitus specimens on all patients presenting with gastrointestinal symptoms associated with eating a meal at the Christmas party. Leftover uneaten bentos were submitted to the DOH by both an attendee and a representative from the organization sponsoring the party. The food was tested at the State Laboratories Division. Cases were identified by contacting all ERs on O`ahu to determine the number of individuals seeking medical treatment due to gastrointestinal

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Table 5. Questionnaire sample profile

Sample Sample Size	Excluded Records	Sex			Eat Bento		Bento Type			ILL			CASE
		M	F	Missing	Yes	No	Mini	Regular	Missing	Yes	NO	Do not Know	
Original Sample 456	0	238	215	3	394	62	105	286	65	207	247	2	
Modified Sample 394	62 (Non-exposed)	198	193	3	394	0	105	285	4	203	231	1	145 cases 249 non- cases

Outbreaks in Hawai'i

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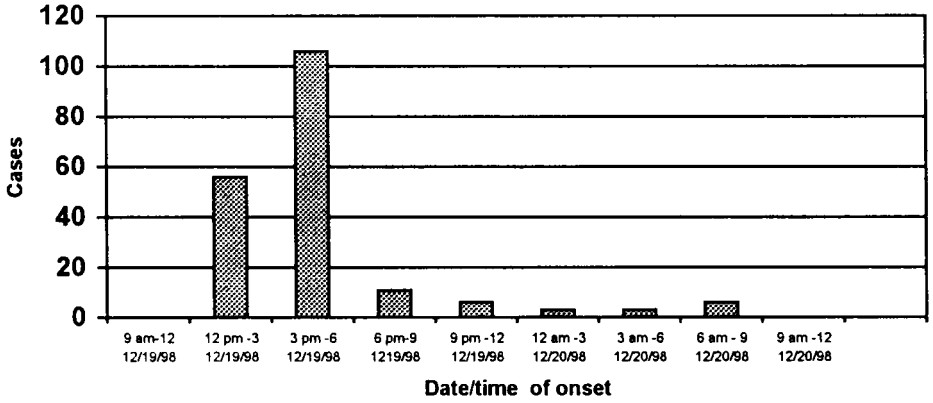
symptoms. Self-administered questionnaires prepared by the DOH were distributed to the Christmas party attendees. That same evening the media alerted the public about the event-related illness through print and television reports.

The event was to begin at 12:00 noon and end at 4:00 p.m. Fruit punch, popcorn, cotton candy, shaved ice, canned sodas and bottled water were provided as well as the boxed meal (bento) lunch. The bento lunches were prepared and boxed by a local caterer at the catererís kitchen facility in Honolulu. Approximately 863 adult bentos and 639 children bentos were ordered. The caterer prepared approximately 1,959 bentos. A total of 1,119 bentos were distributed during the event. A large number of bentos were discarded without being consumed once participants were informed of early reports of illness.

A case was defined as a Christmas party attendee who developed vomiting and/or diarrhea within eight (8) hours of eating a bento. There were 456 questionnaires completed and returned by event attendees. There were 394 (86.7%) persons in this sample who reported eating a bento, and 145 (46%) of these individuals were identified as cases (Table 5).

Figure 1: Epidemic Curve of Illness Onset. Event began at 11:00 a.m. 12/19/98



Univariate analysis demonstrated that the relative risk of cases consuming BBQ meat as 2.3 times compared to non-cases (95% CI=1.4-3.9, p<0.0005); the relative risk of cases consuming hot dogs 1.7 times more likely than non-cases (95% CI=1.1-2.4, p<0.008); and the relative risk of cases consuming luncheon meat 1.6 times more likely than non-cases. (95% CI=1.1-2.4, p<0.006).

Epidemic Curve

The epidemic curve (Figure 1) plotted the time of onset of 191 cases. The onset of illness could not be determined for 16 cases. The pattern of the epidemic curve is consistent with a common source outbreak. Vomiting occurred in 116 (80%) of cases, and diarrhea occurred in 118 (81%) of cases. The mean incubation time was 4 hours with a range of 1.5 to 8 hours. The mean duration of the illness was 14 hours with a range of 2 to 96 hours. There were 78 female and 68 male cases. The mean age was 34 years with a range of 1 to 86 years.

Sanitation Inspection Results

The caterer reportedly produced a total of 1,959 bentos. Preparation began on the day prior to the event, at approximately 10:00 PM, and continued until assembly and packaging were completed. The bento boxes were stacked in cardboard boxes approximately 2 feet by 2 feet. Each box accommodated 24 regular bentos or 42 small bentos. Loading of 80 boxes into a flatbed truck began at 9:30 AM on the day of the event, and the bentos were delivered at 10:15 a.m. In the time between food preparation and delivery, none of the bentos or the food items were hot-

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Table 6. *Staphylococcus aureus* culture results for bentos (pooled food items)

Item	Rice	Luncheon Meat	BBQ Meat	Hot Dog	Chicken
Bento Set 1	250 million per gram	3 billion per gram	2 billion per gram	1.6 billion per gram	4 million per gram
Bento Set 2	130 million per gram	1.2 billion per gram	840 million per gram	18 million per gram	37 million per gram

Table 7. *Staphylococcus aureus* toxin test results, from positive cultures of bento items

Item	Result	Value
Luncheon meat	Positive	0.209
BBQ meat	Positive	0.368
Hot dog	Positive	0.246
Chicken	Negative	Not applicable
Rice	Negative	Not applicable
Other: vomitus	Negative	Not applicable

Outbreaks in Hawai'i

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held or refrigerated. Food items were continuously being cooked and packed until the last bentos were assembled. Completed bentos were stacked and held until packing was completed.

Laboratory Analysis

Four (4) bentos were submitted for testing at the State Laboratories Division. The cultures from the pooled food items from the bentos grew *Staphylococcus aureus* in the quantities shown in Table 6. Four bento item isolates were combined and tested for *S. aureus toxin.* Toxin testing results are shown in Table 7. Pulsed-field gel electrophoresis (PFGE) patterns from the positive food isolates were identical.

Nine human specimens (8 stool and 1 vomitus) were submitted to the State Laboratories Division for enteric pathogen testing. Seven of eight (88%) stool specimens were positive for *Staphylococcus aureus* by culture. No *Bacillus cereus* was isolated. The vomitus specimen was negative by culture. Six of the seven positive clinical specimens were positive for *Staphylococcal* toxin. The PFGE patterns produced by the six toxin-positive stool specimens were indistinguishable from those produced by the food isolates.

Discussion

The final cohort size of 394 attendees who ate bentos and completely filled out their questionnaires accounted for only 35% of the total bentos distributed at the event. Attempts to improve the overall completion rate were unsuccessful. Attempts to increase statistical power by sampling several subsets of attendees were also unsuccessful due to low questionnaire completion rates and small case counts. Although the inadequate sample size decreased the statistical power of the univariate analyses, the unequivocal laboratory analyses supported the conclusion that this outbreak was caused by *Staphylococcal* toxin present on one or more components of the bento lunches.

The quantity of bentos processed for this event likely exceeded the production capability of the facility within recommended food handling guidelines. Hot-holding and cold-holding procedures were not observed at the party site.

The outbreak was most likely larger than questionnaire information revealed. Identification of the short incubation period and short duration typical of Staphylococcal food poisoning aided in the rapid determination of the cause and source of this outbreak. Case finding efforts identified 63 persons requiring medical attention in ERs for gastroenteritis, and 39 cases were identified with an association to the event in question. Of those persons who met the case definition, 132 of 145 persons (91%) responded that their daily activities were affected by the illness.

REMINDERS TO HEALTH CARE PROVIDERS WHEN REPORTING SUSPECTED OUTBREAKS TO THE DEPARTMENT OF HEALTH

- Rapid reporting of a **suspected outbreak** facilitates the identification of the causative agent and source.
- Rapid reporting can reduce the scope and severity of illness by allowing implementation of control measures and appropriate treatment.
- Collection **(Table 8)** of clinical specimens at the time of acute illness is indicated during a suspected outbreak.

Rapid identification of an outbreak is dependent on several factors: timely reporting; rapid, accurate, and proper handling of clinical specimens; and a comprehensive clinical history of the ill case patient(s). In a suspected food borne outbreak, the DOH can test food item(s) depending on the magnitude of the suspected outbreak and the likelihood of lab-

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Table 8. Specimens to Collect for Cases of Suspected Outbreaks

Suspected Illness	Specimen(s) / Item	Action
Food borne illness	Human specimen(s) Food item(s)	Collect stool and/or vomitus during acute phase Advise patient to hold any foods suspected in food borne illness until the DOH has been notified
Upper respiratory illness	Human specimen(s)	Collect nasopharyngeal and/or throat swabs and place in Viral Transport Media. Identification of the etiologic agent is optimal when the specimen is collected during the first 24-48 hours of symptom onset.

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oratory identification of the etiologic agent from suspected food items.

Consultation with Epidemiological Specialists is available during business hours between 7:45 a.m. and 4:30 p.m. on weekdays at 586-4586 in Honolulu. An Epidemiological Specialist is on-call 24 hours a day, 7 days a week to handle suspected outbreaks of infectious diseases.

To report to the Epidemiology Branch after business hours on O`ahu call the Hawai`i State Hospital Operator at 247-2191. For the neighbor islands of Hawai`i, Kaua`i, and Maui (including Moloka`i and Lana`i), the Epidemiological Specialist on call can be reached by calling the State Hospital Operator at 1-(800) 479-8092.

Control of a disease outbreak requires close cooperation between public health officials and the health care providers in the community. The DOH Epidemiology Branch thanks the many health care providers throughout the State who have assisted us with our disease outbreak investigations during the past year. Your professional expertise and clinical observations are always appreciated.

REFERENCES.

[1] Gilligan, PH, Smiley, ML, Shapiro, DS. Gastrointestinal Tract Infections. In: *Cases in Medical Microbiology and Infectious Diseases, 2nd ed.* Washington, DC. ASM Press: 1997:116-117.

[2] Hrdy, D.B., Epidemiology of rotaviral infection in adults. Rev Infect Dis, 1987; 9(3): 461-9.

[3] Pathogens: Epidemiologic and Clinical Features-Rotavirus, in Viral Agents of Gastroenteritis: Public Health Importance and Outbreak Management, at *www.wonder.cdc.gov/wonder/prevguid/p0000277/body0003.htm.*

Rotavirus Vaccine Recalled

On October 15, 1999, Wyeth Laboratories recalled its rotavirus vaccine from the market[1] because of concerns it may increase infants risk of intussusception. In July 1999, the Centers for Disease Control and Prevention (CDC)[2] advised doctors to temporarily stop administering the vaccine to children after 15 infants developed a bowel obstruction. Since then, the number of infants with intussusception possibly linked to the vaccine have reached about 100.

On October 22, 1999, the Advisory Committee on Immunization Practices (ACIP), after a review of the data, concluded that intussusception occurred with significantly increased frequency in the first 1-2 weeks after vaccination with the rhesus rotavirus vaccine-tetravalent (RRV-TV).[3] Therefore the ACIP no longer recommends vaccination of infants with RRV-TV. Children who received the vaccine before July and remain well are not now at increased risk for intussusception.

Prior to FDA approval of the vaccine, 5 cases of bowel obstruction/10,000 doses of vaccine were reported. As a result, intussusception was listed as a potential adverse reaction on the package insert. Concern arose when doctors using the vaccine discovered that the rate of bowel obstructions appeared to be much higher. Physicians who still have doses of the vaccine should immediately return them to the manufacturer. An estimated 1 million infants were vaccinated with RotaShield® since it received governmental marketing approval a year ago.

The relation between intussusception and RRV-TV merits further research. Because rotavirus is the cause of a substantial health burden, the ACIP's decision may not be applicable to other settings, where the burden of disease is higher and where the risks and benefits of rotavirus vaccination could be different.

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[1] Rotavirus Vaccine Recall - USA. Electronic Mail posting on *Promed*® Infectious Disease E-mail service, October 15, 1999.

[2] Sasaki, David M., Rotavirus Vaccine suspension: Notice to Vaccines for Children Providers. *Communicable Disease Report,* July/August 1999, Hawai`i Department of Health, 3.

[3] Centers for Disease Control and Prevention. Withdrawal of Rotavirus Vaccine Recommendation. *MMWR,* 1999;48(43):1007.

Submitted by David M. Sasaki, D.V.M., M.P.H., Veterinary Medical Officer, Epidemiology Branch.

Rotavirus Gastroenteritis in an O`ahu Nursing Home, and Staphylococcal Food Poisoning From Tainted Bento Meals reports were submitted by Myra Ching-Lee, M.P.H., Epidemiological Specialist, Investigations Section, Epidemiology Branch.

Clostridium Food Poisoning report was submitted by Lawrence Inouye, Ph.D., Epidemiological Specialist, Investigations Section, Epidemiology Branch.

Other Epidemiological Specialists involved in the outbreak investigations during 1998 included Chester Wakida (Hawai`i), Jo Manea (Kaua`i), Erick Cremer (Maui), Michele Nakata, Jed Sasaki, Trudi Nekomoto, Alice Ieong, and April Bogard.

Vaccine Storage

Mishaps with vaccines can result in the loss of thousands of dollars. Yet, these events are preventable. The following offers suggestions on protecting your vaccine supply and assisting in developing a vaccine protocol for your clinic or office. Because of changes that occur, it is important to stay current on storage of vaccines.

Train your personnel

- Designate one individual as the vaccine coordinator and assign to this person the responsibility for ensuring that vaccines are carefully handled in a safe, documentable manner. Also, designate a "back-up" vaccine coordinator who is fully trained in these issues.
- Be sure all staff who work with vaccines are aware of your office's protocol on proper storage and handling of vaccines.
- Inform all individuals handling and administering vaccines about specific storage requirements and stability limitations of the vaccines they use. Make sure all staff members involved in administering vaccines are trained in the special handling and administration requirements of the new varicella vaccine since it is different from all others.

Be ready to receive vaccines

When a vaccine shipment is received, open each box immediately and inspect the contents. Note the condition of the vaccine and check the cold chain monitor card if one is included. Assure that the vaccines are cold to the touch. Check all expiration dates of the vaccines. (For varicella vaccine, read and follow the instructions that accompany the shipment before handling. The varicella vaccine shipping container must contain residual dry ice at the time of arrival. If it does not, call Merck at the number listed on the instruction sheet inside the shipping container.

- If any vaccine seems warm or you have any questions about the condition of the vaccine at the time of delivery, mark the vaccine "DO NOT USE" and place it in the required storage conditions, apart from other vaccines. Then call the vaccine manufacturer for consultation. For vaccines received through the Hawai`i Vaccines for Children Program (VFC), call the VFC program at (808) 586-8312 in Honolulu for instructions.
- Depending upon the vaccine, refrigerate or freeze the vaccine immediately. If you are unsure about the vaccine storage requirements, refer to the package insert.
- Consider whether the interval between shipment from the supplier and arrival of the product at its destination is excessive (more than 48 hours) and whether the product has likely been exposed to excessive heat or cold that might alter its integrity.

Proper Storeage and management of vaccines

Details of proper vaccine storage conditions should be posted on or near each refrigerator and freezer used for vaccine storage. If not, they should be readily available.

- Check expiration dates regularly. Depending upon the client flow, this may need to be done daily or weekly.
- When new vaccines arrive, be sure to rotate your stock. The vaccines with the longest expiration dates belong in the back of your refrigerator or freezer.
- Never use outdated vaccines. Vaccine manufacturers have different return policies for outdated vaccines. Contact appropriate representatives. All VFC vaccines must be returned to the VFC program for credit.
- Indicate on the label of each multidose vaccine vial the date and time it was first opened or reconstituted.
- Be familiar with the following rules on when to discard vaccines:
  - Multi-dose vaccine vials containing bacteriostatic agents may be used until their expiration date, as long as aseptic technique is used to withdraw the vaccine and there are no obvious contaminants in the vial.
  - Promptly discard outdated or contaminated opened vials of multidose vaccines.
  - Discard opened vials of vaccine that do not contain a bacteriostatic agent after 24 hours.
  - Discard reconstituted MMR vaccine after 8 hours.
  - Discard reconstituted varicella vaccine after 30 minutes.

Use reliable refrigerators and freezers

The refrigerator(s) and freezer(s) chosen to store the vaccines should be in good condition and preferably the best in the building.

- Keep freezers and refrigerators within the proper temperature ranges. The refrigerator temperature should always be between 2° to 8°C (36° to 46° F). The freezer temperature should be at -15°C (+5°F) or lower.
- Do not use outlets with built-in circuit switches (they have little reset buttons) for refrigerators/freezers. Also, avoid wall outlets that can be activated by a wall switch.
- Purchase a plug guard to prevent people from unplugging the refrigerator/freezer.
- Post a sign next to the outlet and on the electrical panel to warn people not to unplug or disconnect the refrigerator/freezer.
- Post a warning sign: "Do not touch refrigerator or freezer temperature controls".
- Store refrigerated vaccines far enough away from the freezer compartment so they do not freeze.
- Place a tray in the refrigerator in which all opened vials of vaccine are kept. To avoid mishaps, do not store other pharmaceuticals in the same tray.
- Store only OPV and varicella vaccine in the freezer. No other vaccines should be stored in the freezer.
- <u>If you are storing only OPV and not varicella vaccine in your freezer</u>, the freezer must be cold enough to maintain ice in a solid state continuously (below 0°C or 32°F).
- <u>If you are storing varicella vaccine in addition to OPV</u>, then the vaccines must be stored at -15°C (+5°F) or colder. Any freezer which reliably maintains this temperature is acceptable. Household freezers manufactured within the last 5-10 years are designed to maintain temperatures of -15°C to -20°C (+5°F to -4°F).
- Place ice packs in the freezer and

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Pneumococcal Disease

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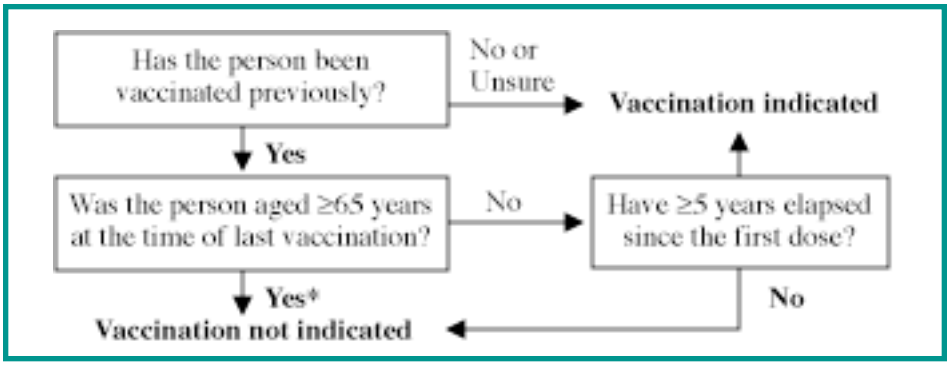
FIGURE 1. Algorithm for vaccinating persons aged ≥65 years



patients are 65 years or older, they should receive the pneumococcal vaccine, even if immunization records cannot be located. Persons with uncertain or unknown vaccination status should also be vaccinated.

The pneumococcal vaccine can prevent many types of pneumococcal disease and may reduce hospital stays. At least half of the 40,000 deaths annually in the U.S. caused by pneumococcal infections could be prevented if persons 65 years and older received the pneumococcal vaccine.

Is revaccination ever suggested?
Routine revaccination of immunocompetent persons is not recommended. Revaccination is recommended for those at highest risk of serious pneumococcal infection and for those persons two years of age and older who are likely to have a rapid decline in pneumococcal antibody levels. Only one revaccination dose is recommended for high-risk persons. The second dose should be administered five or more years after the first dose.

Persons aged 65 years and older should be administered a second dose of pneumococcal vaccine if they received the vaccine more than five years previously, **and** were less than 65 years of age at the time of the first dose.

Generally, are adverse reactions a problem after vaccination or revaccination?
The most common adverse reaction following vaccinations are local reactions (pain, swelling, or erythema at the injection site). Moderate systemic reactions such as fever or myalgias are uncommon and more severe systemic adverse events are rare.

Should the pneumococcal vaccine be given only during the influenza season?
Although during winter months there is a higher incidence of pneumococcal disease, the vaccine can be given at any time during the year.

As an immunization provider, where can I locate additional information about pneumococcal diseases or obtain a copy of the *Recommendations of the Advisory Committee on Immunization Practices (ACIP): Prevention of Pneumococcal Disease April 4, 1997, Vol. 46, No. RR-8?*
Check the Centers for Disease Control and Prevention's web site at: *http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/00047135.htm,* or call the DOH at (808) 586-8332 in Honolulu for information and resources.

REFERENCES:
[1] Atkinson, W.; Humiston, S.; Wolfe C.; and Nelson, R., (Eds), Epidemiology and Prevention of Vaccine-Preventable Diseases, 5th Ed. 1999, Centers for Disease Control and Prevention, Atlanta, GA.
[2] Recommendations of the Advisory Committee on Immunization Practices (ACIP): Prevention of Pneumococcal Disease, 1997. *MMWR,* 46(RR-8)1-21.

Submitted by Judy Strait-Jones, M.P.H., M.Ed., Public Health Educator, Hawai`i Immunization Program, Epidemiology Branch.

Vaccine Storage

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filled plastic water jugs in the refrigerator to help maintain temperature stability. This helps keep temperatures uniform and provides additional cold mass, both of which are useful, particularly if there is a power failure.
- Do not store food or drinks in the refrigerator or freezer where vaccines are stored. Frequent opening and closing of the refrigerator or freezer doors can lead to marked temperature variations and decrease in vaccine efficacy.
- Never store vaccines in the door of the refrigerator or door of the freezer. Storage of vaccines on the door will expose them to wide temperature variations. Always place vaccines in the body of the refrigerator or freezer.

Equip refrigerators and freezers with thermometers and/or monitors

Daily temperature monitoring is vital and will help you determine if the refrigerator/freezer is malfunctioning or being used improperly. Equip the refrigerator and the freezer with their own certified and calibrated thermometers located in the center of the storage compartments. Place the refrigerator thermometer away from the fan and not too close to the freezer.
- Check thermometers and record the temperatures twice a day. The temperatures should be recorded on a log sheet first thing in the morning and just before closing time, and should be consistently at -15°C (+5°F) or colder for varicella and oral polio vaccines and 2° to 8°C (35° to 46°F) for other vaccines.
- Keep the daily log of the temperatures on the refrigerator door.
- Analyze temperature information in order to keep track of the number of times temperatures are out of range for specific vaccines.
- Use maximum/minimum thermometers in the refrigerator and the freezer to monitor temperatures and to determine the range of temperatures to which your vaccines are exposed. Many hardware stores carry these inexpensive thermometers, as do medical supply companies.

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Hepatitis A: ACIP Update

Hepatitis A continues to be one of the most frequently reported vaccine-preventable diseases in the United States, despite the licensure of a hepatitis A vaccine in 1995. Widespread vaccination of appropriate susceptible populations would substantially lower disease incidence and potentially eliminate indigenous transmission of hepatitis A virus infection.

The Advisory Committee on Immunization Practices (ACIP) 1996 recommendations on the prevention of hepatitis A through immunization[1] focused primarily on vaccinating persons in groups shown to be at high risk for infection (e.g., travelers to countries with high or intermediate disease endemicity, men who have sex with men, injecting-drug users, persons with clotting-factor disorders), persons with chronic liver disease because they are at increased risk for acute liver failure from hepatitis A, and children living in communities with high rates of disease. However, a review of national epidemiologic data and results from community-based vaccination programs indicate that the recommendations would not result in vaccinations of most groups with consistently elevated rates of disease, and would have limited impact on the overall incidence of the disease in the United States.

In October 1999, the Advisory Committee on Immunization Practices (ACIP) updated recommendations for the prevention of Hepatitis A through active and passive immunization.[2] This document includes new information for the use of the hepatitis A vaccine.

Routine vaccination of children is the most effective way to reduce the incidence of hepatitis A over time. Since licensure of a hepatitis A vaccine in 1995, this strategy has been implemented incrementally, starting with the 1996 recommendations to vaccinate children living in communities with the highest rates of infection and disease. The updated recommendations represent the next phase of this hepatitis A immunization strategy: Vaccination of children living in states and communities with consistently elevated rates of hepatitis A. This will provide protection from disease and is expected to reduce the overall incidence of hepatitis A.

New Recommendations

This report supersedes the ACIP's 1996 recommendations for the prevention of hepatitis A through immunization and includes:

• new data about the epidemiology of hepatitis A;

• recent findings about the effectiveness of community-based hepatitis A vaccination programs; and

• recommendations for the routine vaccination of children in states, counties, and communities with rates twice the 1987-1997 national average or greater (i.e., ≥20 cases per 100,000 population), and consideration of routine vaccination of children in states, counties, and communities with rates exceeding the 1987-1997 national average (i.e. ≥10 but <20 cases per 100,000 population).

Unchanged in this report are previous recommendations regarding the vaccination of persons in groups at increased risk for hepatitis A or its adverse consequences, and recommendations regarding the use of immune globulin for protection against hepatitis A.

Impact on Hawai`i

The new recommendations to vaccinate children in states, counties and communities with high and intermediate case rates do not affect Hawai`i. The State's annual Hepatitis A case rate from 1987-1997 did not exceed 20 cases per 100,000 population. From 1987 to 1997, Hawai`i's case rate fluctuated between a low of 1.91/100,000 in 1988 to a high of 14.92/100,000 in 1992, with an average case rate of 8.60/100,000. Therefore, Hawai`i did not qualify for hepatitis A vaccine through the Vaccines for Children (VFC) program.

The new recommendations may be accessed on the internet through the Centers for Disease Control and Prevention web site at: *www.cdc.gov/epo/mmwr/preview/mmwrhtml/rr4812a1.htm*. For more information, please call the Epidemiology Branch's Hepatitis Section at (808) 586-8324 in Honolulu.

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[1] Centers for Disease Control and Prevention. Prevention of Hepatitis A Through Active or Passive Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 1999;48(RR-12):1-37.

[2] Centers for Disease Control and Prevention. Prevention of Hepatitis A through Active or Passive Immunization: Recommendations of the Advisory Committee on Immunization Practices. *MMWR* 1996;45(RR-15):1-30.

Submitted by Mitsuto Sugi, M.P.H., Supervisor, Hepatitis Section, Epidemiology Branch.

Vaccine Storage

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- If several days are going to pass until the next time the clinic is open (such as over a long holiday) someone should be assigned to check the refrigerator every one to two days over the holiday or have a refrigerator monitoring device installed that is programmed to call a responsible party in the event of a problem.
- Some facilities, depending on their financial investment in vaccines, may need a high-tech continuous monitoring system that will alert a guard or call a designated telephone number if there is temperature problem. These facilities may also want to consider a back-up generator.

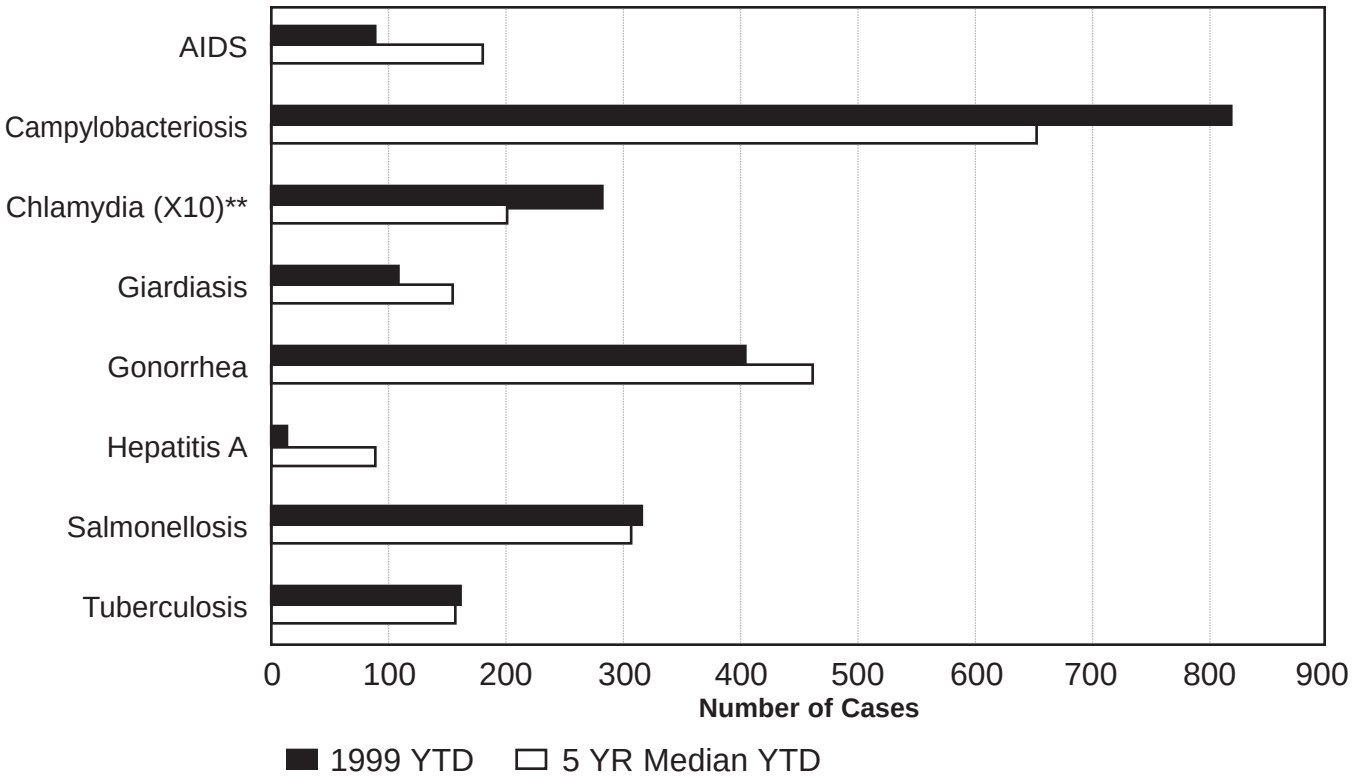
REFERENCE

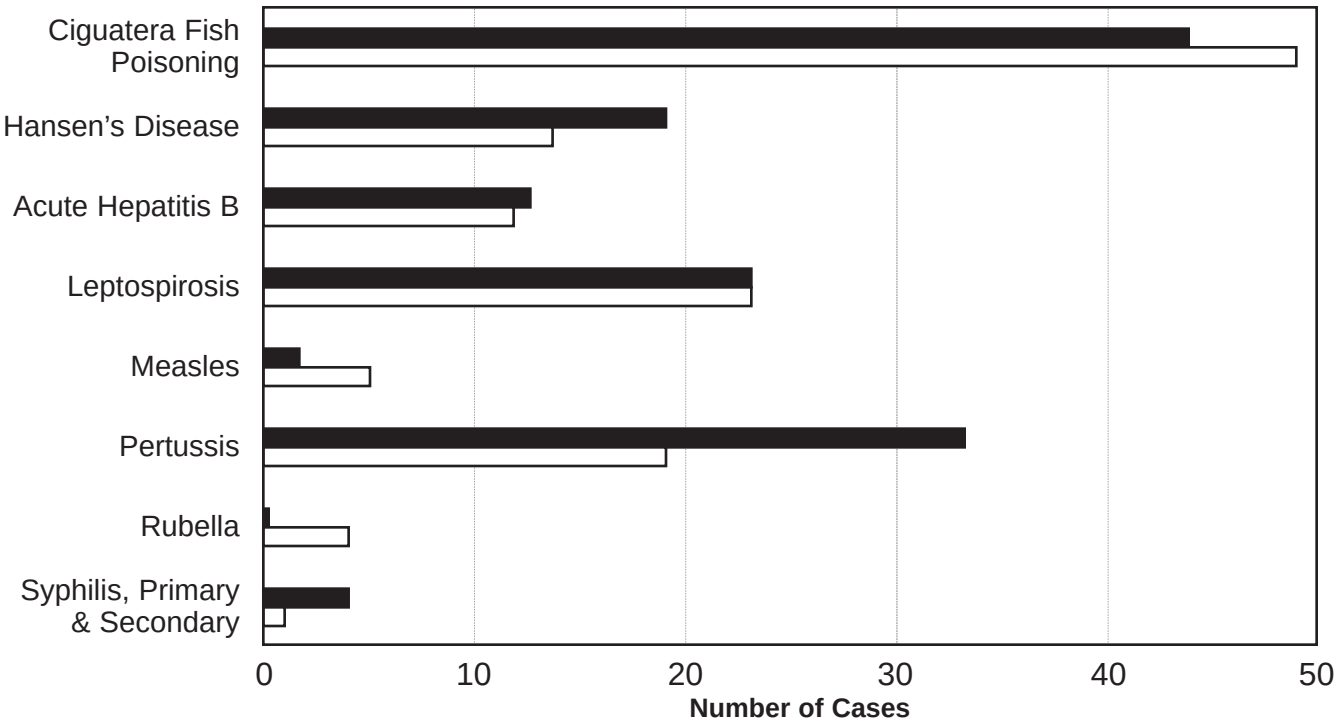
Vaccine Handling, Storage & Transport. NEEDLE TIPS & the Hepatitis B Coalition News, 1996;6(1):2-3.

Submitted by Chuck Miller, M.A., Coordinator, Hawai`i Vaccines for Children Program, Hawai`i Immunization Program, Epidemiology Branch.

Communicable Disease Surveillance

Selected Diseases by Date of Report*
Hawai'i, 1999 Year-to-date Through November





* These data do not agree with tables using date of onset or date of diagnosis.
** The number of cases graphed represent 10% of the total number reported.